

Specification

Boilers:

Furnish and install _____ forced draft firetube steel factory packaged boilers for (No. _____ oil) (_____ gas) (combination _____ gas and No. _____ oil) complete with fuel burning equipment, safety and operating controls, and appurtenances as hereinafter specified.

1. Boiler unit(s) shall be Burnham Commercial Model 4F _____ as manufactured by Burnham Commercial, for (15 psi steam) (30 psi water) (60 psi water) service, and shall have a gross output of _____ MBH.

2. Boiler unit(s) shall contain not less than _____ sq. ft. of fireside heating surface and not less than _____ cubic feet of furnace volume. Heat release in the firebox shall not exceed _____ BTU/hr. per cubic foot.

3. Boiler pressure vessel shall be constructed, tested, and marked in accordance with the ASME code for low pressure heating boilers and shall be registered with The National Board of Boiler and Pressure Vessel Inspectors.

4. The unit(s) shall be of 3-pass firebox design with two passes of horizontal firetubes. All tubes shall be roller expanded at each end and shall be flared. Unit(s) shall be sealed for pressurized firing, shall have welded on skid base with factory installed firebox floor insulation, gas-tight front flue door, and gas-tight rear smokebox with (rear) (top) outlet. A Pyrex glass observation port shall be provided at the rear of the firebox, units larger than 320 square feet fireside heating surface shall have the observation port installed in a 16 inch diameter rear access door.

5. Unit(s) shall be provided with factory installed enamel finish jacket and not less than 1 inch thick fiberglass insulation.

*6a. Trim and controls for steam units shall consist of steam pressure gauge, water gauge set, ASME safety valve(s), low water cut-off, operating pressure control, high limit pressure control, [firing rate control with (lo-hi-lo) or (modulating) sequence], flue cleaner brush with handle. Units larger than 675 square feet heating surface shall be provided with a pump controller combined with the low water cut-off.

*6b. Trim and controls for water units shall consist of pressure-altitude gauge and thermometer, ASME relief valve(s), low water cut-off, operating temperature control, high limit temperature control, [firing rate control with (10-h i-lo) or (modulating) sequence], flue cleaner brush with handle.

*7. Unit(s) shall be equipped with Model _____ built-in tankless heater coil installed in the water space at the front of the boiler, with capacity to heat _____ GPH of domestic water from 40° F to 140° F with boiler water at _____ °F

8. Fuel Burning Equipment: The burner(s) shall be factory installed and wired, shall incorporate all necessary devices and controls to make a complete fuel burning system for the type of fuel hereinbefore specified, and shall bear the listing label of Underwriters Laboratories, Inc. evidencing compliance with requirements of UL-296 for oil burners, and/or UL-795 for gas burners.

*Oil burners for No.2 oil shall be of the forced draft pressure atomizing type, complete with integral motor driven blower, oil pump, oil nozzle(s), oil solenoid valve(s), ignition assembly, combustion safeguard, motor starters, and all necessary controls for safe and efficient operation in accordance with UL requirements (and FM requirements) (and IRI requirements).

Note: Insert additional details such as desired combustion safeguard, firing sequence, and/or other features to meet project requirements.

*Oil burners for (No.2 oil) (No.4 oil) (No.5 oil) (No.6 oil) shall be of the forced draft low pressure air atomizing type, complete with integral motor driven blower, air compressor, oil supply pump, atomizing assembly, ignition assembly, combustion safeguard, motor starters, and all necessary controls for safe and efficient operation in accordance with UL requirements (and FM requirements) (and IRI requirements).

Note: Insert additional details such as desired combustion safeguard, firing sequence, oil heating equipment for heavy oil, and/or other features to meet project requirements.

*Gas burners shall be of the forced draft multi-jet type suitable for burning gas with heat content of _____ BTU per cubic foot and specific gravity of (_____ inches w.c.) (_____ psig). Burner shall be complete with integral motor driven blower, ignition assembly, combustion safeguard, motor starter, complete gas train, including gas pressure regulator and dual gas valves, and all necessary controls for safe and efficient operation in accordance with UL requirements (and FM requirements) (and IRI requirements).

Note: Insert additional details such as desired combustion safeguard, firing sequence, and/or other features to meet project requirements.

*Combination gas/oil burner shall consist of an integral assembly of a forced draft pressure atomizing oil burner suitable for burning No.2 oil and a forced draft multi-jet type gas burner suitable for burning _____ gas with a heat content of _____ BTU per cubic foot and specific gravity of _____ delivered to the gas train inlet at a pressure of (_____ inches w.c.) (_____ psig). Burner shall be complete with integral motor driven blower, oil pump, oil nozzle(s), oil solenoid valve(s), ignition assembly, combustion safeguard, motor starters, complete gas train including gas pressure regulator and dual gas valves, and all necessary controls for safe and efficient operation in accordance with UL requirements (and FM requirements) (and IRI requirements). Changeover to either fuel shall be by means of a manual selector switch which shall energize only those circuits necessary to provide the appropriate timing and sequence of events for the fuel selected, except that the oil pump may continue to operate when firing gas. No burner adjustments or re-positioning of control linkage shall be required when changing from one fuel to the alternate fuel.

Note: Insert additional details such as desired combustion safeguard, firing sequence, and/or other features to meet project requirements.

*Combination gas/oil burner shall consist of an integral assembly of a forced draft low pressure air atomizing oil burner suitable for burning (No.2 oil) (No.4 oil) (No.5 oil) (No.6 oil) and a forced draft multi-jet gas burner suitable for burning _____ gas with a heat content of _____ BTU per cubic foot and specific gravity of _____ delivered to the gas train inlet at a pressure of (_____ inches w.c.) (_____ psig). Burner shall be complete with integral motor driven blower, air compressor, oil supply pump, atomizing assembly, ignition assembly, combustion safeguard, motor starters, complete gas train including gas pressure regulator and dual gas valves, and all necessary controls for safe and efficient operation in accordance with UL requirements (and FM requirements) (and IRI requirements). Changeover to either fuel shall be by means of a manual selector switch which shall energize only those circuits necessary to provide the appropriate timing and sequence of events for the fuel selected, except that the oil pump may continue to operate when firing gas. No burner adjustments or repositioning of control linkage shall be required when changing from one fuel to the alternate fuel.

Note: Insert additional details such as desired combustion safeguard, firing sequence, and/or other features to meet project requirements.

9. Electrical supply to the boiler(s) will be _____ volts _____ hz _____ phase. All control circuits shall be 120 volts, 60 hz, 1 phase, with all switches in the ungrounded leg. Fuse protection for the control circuit shall be provided.